

REMARKS

In the Office action mailed on August 18, 1999, the Examiner has rejected all the pending claims under 35 U.S.C. 112 as indefinite. Bu this amendment Applicant canceled all the pending claims and submits new claims 33-42 to clarify the subject matter of the invention. Care has been taken that no new matter is presented in the new claims, and the claims are supported by the original specification.

Applicant also rejected claims 1, 2 and 4 under 35 U.S.C. 102(e) over Nelson (US patent 5,820,456) and under 35 U.S.C. 102(b) over Nilsson's USP 4,781,107 and JA 0,092,738. Claims 1 and 2 are also rejected under 35 U.S.C. 102(e) and 103(a) over Smith (USP 4,437,608) and Belusa (USP 4,705,457). Claim 3 is rejected under 35 U.S.C. 103(a) over GB 344,914.

Applicant appreciates the time and consideration provided by the Examiner in reviewing this application but respectfully traverses the ground of rejection stated and submits that the air-condition apparatus according to the claim presented by this amendment is patentable over the prior art at least for reasons set forth below.

The purpose of the present invention is to get a better mixing of the room air with supplied air by maintaining in the room an excess pressure over the outside pressure.

The greater the excess pressure is in the room to be air-conditioned, the better is the ventilation by the supply air blown through the room, and the better is the mixing of the room air with the supply air. Thereby the room warms up faster, the efficiency of the air-conditioning apparatus is improved and sufficient temperature fluctuations in the room, such as when the top of the room is being very warm and the bottom of the room is being very cold, can be avoided, as well as the temperature differences over the length and the width of the room. A good flow of air through the room ensures that a room is heated, cooled, humidified or dehumidified in the shortest possible time and with a smaller amount of air. It is found more comfortable when the supply air is provided by small amounts.

For the faster adaptation of the heating, cooling, humidifying and dehumidifying to the desired values, the efficiency of the air-conditioning apparatus is improved.

However, no citation disclosed this teaching.

Nilsson in US 4,781,107 discloses a regulator in a ventilation plant. This regulator enables to obtain the desired control accuracy and even to obtain a minimum non-disruptive overpressure to completely eliminate the risk of temperature drop in the room. Specifically this document discloses that if the static pressure of the outside air and the air in the room are equal, the disruptions of the circulation flow will not occur, see column 2, second paragraph of this document. The main principal of the disclosed regulator is to maintain the pressure in the room equal to the outside pressure, which clearly teaches away from the present invention. Moreover, the US 4,781,107 only discloses, but does not solve the problem which the invention is solving. According to figure 2 of the citation there are openings 5 and 6. The problem is to prevent the supplied air from the opening 5 to come directly to the opening 6 without being mixed with the room air. This problem could be solved by the teaching of the invention.

The purpose of the JA 58-927738 is to adjust minor differential pressure between the outdoor and indoor, to compensate negative or positive pressure in the room, which also teaches away from the goal of the present invention to maintain an excess pressure in the room to be air-conditioned.

Smith in USP'608 discloses a supply fan - return fan variable air volume system utilizing complex and expensive precise control elements. The mixing of the outside air is provided within the supply duct and supply air pressure is controlled by control elements in the supply duct to minimize the flow of the outside air in the system. The patent teaches away from the present application.

In Belusa's '457 patent an apparatus for controlling the capacity of a return fan to closely match the capacity of the supply fan is disclosed, and to adjust the ration of return fan output to supply fan output. The idea is totally different from that of the present invention.

Thus, the cited references clearly teach away from the present invention and cannot render it obvious.

In view of the forgoing, Applicant respectfully requests the Examiner's consideration of the newly presented claims. It is respectfully submitted that all pending claims of the application as now presented, are formally correct and allowable on the merits over the art of record. A favorable action is respectfully requested.

The Commissioner is hereby authorized to charge any fees associated with this communication to our Deposit Account no. 50-0305.

If any additional information is required, the Examiner is invited to contact Robert J. Schneider at (312) 845-3919.

Respectfully submitted,

By: 

Robert J. Schneider

Reg. No. 27,383

November 18, 1999
CHAPMAN AND CUTLER
111 W. Monroe Street
Chicago, IL 60603-4080
(312)845-3919